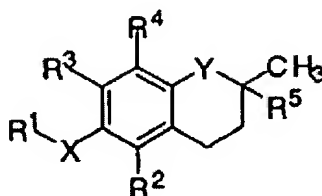


## CLAIM AMENDMENT

1. (Currently amended): A method for inhibiting the growth of tumor cells in an individual comprising administering to the individual a pharmacologically effective dose of a compound having a structural formula



Wherein X is oxygen or nitrogen;

Y is oxygen or NR<sup>6</sup>

R<sup>1</sup> is -C<sub>1-10</sub>alkylene-COOH, -C<sub>1-4</sub>alkylene-CONH<sub>2</sub>, -C<sub>1-4</sub>alkylene-COO-C<sub>1-4</sub>alkyl, -C<sub>1-4</sub>alkylene-CON(C<sub>1-4</sub>alkylene-COOH)<sub>2</sub>, -C<sub>1-4</sub>alkylene-OH, -C<sub>1-4</sub>alkylene-NH<sub>3</sub>-halo or -C<sub>1-4</sub>alkylene-OSO<sub>2</sub>NH(C<sub>1-4</sub>alkyl), -C<sub>1-4</sub>alkylene-COO-C<sub>1-4</sub>alkyl, -C<sub>1-10</sub>alkylene-CO-SH, -C<sub>1-4</sub>alkylene-CO-S(C<sub>1-4</sub>alkyl), -C<sub>1-4</sub>alkylene-CS-NH<sub>2</sub>, -C<sub>1-4</sub>alkylene-CO-NH<sub>(2-n)</sub>(C<sub>1-4</sub>alkyl)<sub>n</sub> wherein n is 2 or 1, -C<sub>1-4</sub>alkylene-SO<sub>2</sub>-O(C<sub>1-4</sub>alkyl), -C<sub>1-4</sub>alkylene-OSO<sub>2</sub>-O(C<sub>1-4</sub>alkyl), -C<sub>1-4</sub>alkylene-OP(O-C<sub>1-4</sub>alkyl)<sub>3</sub>, or -C<sub>1-10</sub>alkylene-CN;

R<sup>2</sup> and R<sup>3</sup> are independently hydrogen or R<sup>4</sup>;

R<sup>4</sup> is methyl;

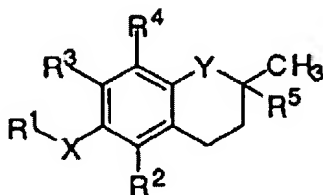
R<sup>5</sup> is a C<sub>7-16</sub> olefinic group containing 3 to 5 ethylenic bonds;

R<sup>6</sup> is hydrogen or methyl.

2. (Currently amended): The method of claim 1, wherein said compound is an  $\alpha$ -tocotrienol, a  $\gamma$ -tocotrienol or a  $\delta$ -tocotrienol.

3. (Original): The method of claim 1, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

4. (Previously presented): The method of claim 1, wherein said compound induces apoptosis, DNA synthesis arrest, cell cycle arrest, or cellular differentiation in cells comprising said tumor.
5. (Previously presented): The method of claim 1, wherein said compound is administered in a dose of about 1 mg/kg to about 60 mg/kg.
6. (Previously presented): The method of claim 5, wherein administration of said composition is oral, topical, liposomal/aerosol, intraocular, intranasal, parenteral, intravenous, intramuscular, or subcutaneous.
7. (Canceled)
8. (Currently amended): The method of claim 1, wherein said tumor cells comprise an ovarian cancer, a cervical cancer, an endometrial cancer, a bladder cancer, a lung cancer, a breast cancer, a testicular cancer, a prostate cancer, a glioma, a fibrosarcoma, a retinoblastoma, a melanoma, a soft tissue sarcoma, an osteosarcoma, a leukemia, a colon cancer, a carcinoma of the kidney, a pancreatic cancer, a basal cell carcinoma, or a squamous cell carcinoma.
- 9-13. (Canceled)
14. (Currently amended): A method of inducing apoptosis of a cell, comprising the step of contacting said cell with a pharmacologically effective dose of a compound having a structural formula



Wherein X is oxygen or nitrogen;

Y is oxygen or NR<sup>6</sup>

R<sup>1</sup> is -C<sub>1-10</sub>alkylene-COOH, -C<sub>1-4</sub>alkylene-CONH<sub>2</sub>, -C<sub>1-4</sub>alkylene-COO-C<sub>1-4</sub>alkyl, -C<sub>1-</sub>

$\text{-C}_{1-4}\text{alkylene-CON}(\text{C}_{1-4}\text{alkylene-COOH})_2$ ,  $\text{-C}_{1-4}\text{alkylene-OH}$ ,  $\text{-C}_{1-4}\text{alkylene-NH}_3\text{-halo}$  or  $\text{-C}_{1-4}\text{alkylene-OSO}_2\text{NH}(\text{C}_{1-4}\text{alkyl})$ ,  $\text{-C}_{1-4}\text{alkylene-COO-C}_{1-4}\text{alkyl}$ ,  $\text{-C}_{1-10}\text{alkylene-CO-SH}$ ,  $\text{-C}_{1-4}\text{alkylene-CO-S}(\text{C}_{1-4}\text{alkyl})$ ,  $\text{-C}_{1-4}\text{alkylene-CS-NH}_2$ ,  $\text{-C}_{1-4}\text{alkylene-CO-NH}_{(2-n)}(\text{C}_{1-4}\text{alkyl})_n$  wherein  $n$  is 2 or 1,  $\text{-C}_{1-4}\text{alkylene-SO}_2\text{-O}(\text{C}_{1-4}\text{alkyl})$ ,  $\text{-C}_{1-4}\text{alkylene-OSO}_2\text{-O}(\text{C}_{1-4}\text{alkyl})$ ,  $\text{-C}_{1-4}\text{alkylene-OP}(\text{O-C}_{1-4}\text{alkyl})_3$ , or  $\text{-C}_{1-10}\text{alkylene-CN}$ ;

$\text{R}^2$  and  $\text{R}^3$  are independently hydrogen or  $\underline{\text{R}}^4$ ;

$\text{R}^4$  is methyl;

$\text{R}^5$  is a  $\text{C}_{7-16}$  olefinic group containing 3 to 5 ethylenic bonds;

$\text{R}^6$  is hydrogen or methyl.

15. (Currently amended): The method of claim 14, wherein said compound is an  $\alpha$ -tocotrienol, a  $\gamma$ -tocotrienol or a  $\delta$ -tocotrienol.

16. (Original): The method of claim 14, wherein said compound is 2,5,7,8-tetramethyl-2R-(4,8,12-trimethyl-3,7,11 E:Z tridecatrien) chroman-6-yloxy) acetic acid.

17. (Canceled)

18. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-10}\text{alkylene-COOH}$ .

19. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-CONH}_2$ .

20. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-COO-C}_{1-4}\text{alkyl}$ .

21. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-CON}(\text{C}_{1-4}\text{alkylene-COOH})_2$ .

22. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-OH}$ .

23. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-NH}_3\text{-halo}$ .

24. (Previously presented): The method of claim 1, wherein  $\text{R}^1$  is  $\text{-C}_{1-4}\text{alkylene-OSO}_2\text{NH}(\text{C}_{1-4}\text{alkyl})$ .

alkyl).

25. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-COO-}C_{1-4}\text{alkyl}$ .

26. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-10}\text{alkylene-CO-SH}$ .

27. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CO-S}(C_{1-4}\text{alkyl})$ .

28. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CS-NH}_2$ .

29. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CO-NH}_{(2-n)}(C_{1-4}\text{alkyl})_n$  wherein  $n$  is 2 or 1.

30. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-SO}_2\text{-O}(C_{1-4}\text{alkyl})$ .

31. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OSO}_2\text{-O}(C_{1-4}\text{alkyl})$ .

32. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OP}(\text{O-}C_{1-4}\text{alkyl})_3$ .

33. (Previously presented): The method of claim 1, wherein  $R^1$  is  $-C_{1-10}\text{alkylene-CN}$ .

34. (Previously presented): The method of claim 1, wherein  $R^2$  is hydrogen.

35. (Previously presented): The method of claim 1, wherein  $R^2$  is methyl.

36. (Previously presented): The method of claim 1, wherein  $R^3$  is hydrogen.

37. (Previously presented): The method of claim 1, wherein  $R^3$  is methyl.

38. (Previously presented): The method of claim 1, wherein  $R^4$  is methyl.

39. (Previously presented): The method of claim 1, wherein  $R^5$  is a  $C_{7-16}$  olefinic group containing 3 to 5 ethylenic bonds.

40. (Previously presented): The method of claim 1, wherein  $R^6$  is methyl.
41. (Previously presented): The method of claim 1, wherein  $R^6$  is hydrogen.
42. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-10}\text{alkylene-COOH}$ .
43. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CONH}_2$ .
44. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-COO-C}_{1-4}\text{alkyl}$ .
45. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CON}(\text{C}_{1-4}\text{alkylene-COOH})_2$ .
46. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OH}$ .
47. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-NH}_3\text{-halo}$ .
48. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OSO}_2\text{NH}(\text{C}_{1-4}\text{alkyl})$ .
49. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-COO-C}_{1-4}\text{alkyl}$ .
50. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-10}\text{alkylene-CO-SH}$ .
51. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CO-S}(\text{C}_{1-4}\text{alkyl})$ .
52. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CS-NH}_2$ .
53. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-CO-NH}_{(2-n)}(\text{C}_{1-4}\text{alkyl})_n$  wherein  $n$  is 2 or 1.
54. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-SO}_2\text{-O}(\text{C}_{1-4}\text{alkyl})$ .

55. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OSO}_2\text{-O}(C_{1-4}\text{alkyl})$ .
56. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-4}\text{alkylene-OP}(\text{O}-C_{1-4}\text{alkyl})_3$ .
57. (Previously presented): The method of claim 14, wherein  $R^1$  is  $-C_{1-10}\text{alkylene-CN}$ .
58. (Previously presented): The method of claim 14, wherein  $R^2$  is hydrogen.
59. (Previously presented): The method of claim 14, wherein  $R^2$  is methyl.
60. (Previously presented): The method of claim 14, wherein  $R^3$  is hydrogen.
61. (Previously presented): The method of claim 14, wherein  $R^3$  is methyl.
62. (Previously presented): The method of claim 14, wherein  $R^4$  is methyl.
63. (Previously presented): The method of claim 14, wherein  $R^5$  is a  $C_{7-16}$  olefinic group containing 3 to 5 ethylenic bonds.
64. (Previously presented): The method of claim 14, wherein  $R^6$  is methyl.
65. (Previously presented): The method of claim 14, wherein  $R^6$  is hydrogen.